

CLAIMS

1. A polypeptide, or a salt thereof, comprising the amino acid sequence represented by SEQ ID NO: 1 or SEQ ID NO: 2 and having the activity of promoting GLP-1 secretion from a cell.
2. A polypeptide, or a salt thereof, comprising an amino acid sequence formed by providing deletion, substitution, or addition of one or several amino acids into the amino acid sequence represented by SEQ ID NO: 1 or SEQ ID NO: 2, and having the activity of promoting GLP-1 secretion from a cell.
3. A polypeptide, or a salt thereof, comprising an amino acid sequence having at least 85% sequence identity to the amino acid sequence represented by SEQ ID NO: 1 or SEQ ID NO: 2 and having the activity of promoting GLP-1 secretion from a cell.
4. The polypeptide or a salt thereof according to any one of claims 1 to 3, wherein GLP-1 induces insulin secretion.
5. The polypeptide or a salt thereof according to any one of claims 1 to 4, present on an enteroendocrine cell.
6. A polynucleotide containing a polynucleotide encoding the polypeptide according to any one of claims 1 to 5.

7. A recombinant vector containing the polynucleotide according to claim 6.
8. A pharmaceutical composition for lowering the high blood sugar level associated with diabetes, containing the vector according to claim 7 as an active ingredient.
9. The pharmaceutical composition according to claim 8, for inducing insulin secretion.
10. A ligand for the polypeptide or a salt thereof according to any one of claims 1 to 5.
11. The ligand according to claim 10, wherein the ligand is a straight-chain or branched free fatty acid.
12. The ligand according to claim 11, wherein said free fatty acid has a carbon number of 10 to 24.
13. The ligand according to claim 11 or 12, wherein said free fatty acid has an unsaturated bond number of 0 to 6.
14. The ligand according to claim 13, wherein said free fatty acid is selected from the group consisting of capric acid, lauric acid, myristic acid, pentadecanoic acid, palmitic acid, stearic acid, arachic acid, behenic acid, margaric acid, palmitoleic acid, eicosatrienoic acid, elaidic acid,

petroselinic acid, oleic acid, α -linolenic acid, γ -linolenic acid, homo- γ -linolenic acid, arachidonic acid, eicosadienoic acid, eicosatrienoic acid, eicosapentaenoic acid, docosahexaenoic acid, linoleic acid, eicosatetraenoic acid, and vaccenic acid.

15. A pharmaceutical composition for lowering the high blood sugar level associated with diabetes, containing the ligand according to any one of claims 10 to 14 as an active ingredient.

16. The pharmaceutical composition according to claim 15, for inducing insulin secretion.

17. A method for determining a ligand for the polypeptide or a salt thereof according to any one of claims 1 to 5, the method comprising the step of examining the specific binding ability of a candidate ligand substance to the polypeptide or a salt thereof.

18. A method for screening a substance altering the binding properties of a ligand for the polypeptide or a salt thereof according to any one of claims 1 to 5 to the polypeptide or a salt thereof, the method comprising using the polypeptide or a salt thereof.

19. A kit for screening a substance altering the binding properties of a ligand for the polypeptide or a salt thereof

according to any one of claims 1 to 5 to the polypeptide or a salt thereof, which contains the polypeptide or a salt thereof as a constituent.

20. A method for detecting the polypeptide or a salt thereof according to any of claims 1 to 5 in a sample derived from a subject suffering from or at risk of diabetes, which comprises contacting the sample with an agent specifically recognizing the polypeptide or a salt thereof to detect the polypeptide or a salt thereof.

21. The method according to claim 20, wherein said agent is an antibody capable of specifically binding to the polypeptide or a salt thereof according to any of claims 1 to 5.

22. A kit used in the method according to claim 20 or 21, which contains said agent as an essential constituent.

23. A polypeptide, or a salt thereof, comprising the amino acid sequence represented by SEQ ID NO: 1 or SEQ ID NO: 2 and having the activity of promoting CCK secretion from a cell.

24. A polypeptide, or a salt thereof, comprising an amino acid sequence formed by providing deletion, substitution, or addition of one or several amino acids into the amino acid sequence represented by SEQ ID NO: 1 or SEQ ID NO: 2, and having the activity of promoting CCK secretion from a cell.

25. A polypeptide, or a salt thereof, comprising an amino acid sequence having at least 85% sequence identity to the amino acid sequence represented by SEQ ID NO: 1 or SEQ ID NO: 2 and having the activity of promoting CCK secretion from a cell.

26. The polypeptide or a salt thereof according to any one of claims 23 to 25, present on an enteroendocrine cell.

27. A polynucleotide containing a polynucleotide encoding the polypeptide according to any one of claims 23 to 26.

28. A recombinant vector containing the polynucleotide according to claim 27.

29. A pharmaceutical composition for treating eating disorders, containing the vector according to claim 28 as an active ingredient.

30. A ligand for the polypeptide or a salt thereof according to any one of claims 23 to 26.

31. The ligand according to claim 30, wherein the ligand is a straight-chain or branched free fatty acid.

32. The ligand according to claim 31, wherein said free fatty acid has a carbon number of 10 to 24.

33. The ligand according to claim 31 or 32, wherein said free fatty acid has an unsaturated bond number of 0 to 6.

34. The ligand according to claim 33, wherein said free fatty acid is selected from the group consisting of capric acid, lauric acid, myristic acid, pentadecanoic acid, palmitic acid, stearic acid, arachic acid, behenic acid, margaric acid, palmitoleic acid, eicosatrienoic acid, elaidic acid, petroselinic acid, oleic acid, α -linolenic acid, γ -linolenic acid, homo- γ -linolenic acid, arachidonic acid, eicosadienoic acid, eicosatrienoic acid, eicosapentaenoic acid, docosahexaenoic acid, linoleic acid, eicosatetraenoic acid, and vaccenic acid.

35. A pharmaceutical composition for treating eating disorders, containing the ligand according to any one of claims 30 to 34 as an active ingredient.

36. The pharmaceutical composition according to claim 29 or 35, for treating obesity.

37. The pharmaceutical composition according to claim 29 or 35, for treating cibophobia.

38. A dietary supplement composition containing the ligand according to any one of claims 30 to 34 as an active ingredient.

39. The dietary supplement composition according to claim 38, used for rational dieting.

40. The dietary supplement composition according to claim 38, used for alleviating anorexia.

41. A method for determining a ligand for the polypeptide or a salt thereof according to any one of claims 23 to 26, the method comprising the step of examining the specific binding ability of a candidate ligand substance to the polypeptide or a salt thereof.

42. A method for screening a substance altering the binding properties of a ligand for the polypeptide or a salt thereof according to any one of claims 23 to 26 to the polypeptide or a salt thereof, the method comprising using the polypeptide or a salt thereof.

43. A kit for screening a substance altering the binding properties of a ligand for the polypeptide or a salt thereof according to any one of claims 23 to 26 to the polypeptide or a salt thereof, which contains the polypeptide or a salt thereof as a constituent.

44. A method for detecting the polypeptide or a salt thereof according to any of claims 23 to 26 in a sample derived from a subject suffering from or at risk of an eating disorder, which comprises contacting the sample with an agent specifically recognizing the polypeptide or a salt thereof to detect the polypeptide or a salt thereof.

45. The method according to claim 44, wherein said agent is an antibody capable of specifically binding to the polypeptide or a salt thereof according to any of claims 23 to 26.

46. A kit used in the method according to claim 44 or 45, which contains said agent as an essential constituent.